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DEVELOPMENT AND USE OF OPEN SOURCE SOFTWARE

INTRODUCTION

DOE Laboratories are developing software programs that are very useful to third parties. Under their Management & Operating Contract (M&O Contract), the Laboratories deposit their software in DOE's Energy Science and Technology Software Center (ESTSC) for distribution to the public. However, the deposited software can become obsolete very quickly and may not be commercially valuable as deposited. Alternatively, under its M&O Contract, a DOE Laboratory may choose to assert copyright in its software in order to license it to companies, universities or other entities for further development and distribution. A new approach has recently been tried. Some Laboratory software may be distributed to the public by designating the software as Open Source Software (OSS), which means, generally, that recipients may obtain the source code, modify it, and further distribute it with minimal restrictions. These OSS licenses may be at no cost, or may be fee-based. Questions have arisen as to the relationship of the new OSS approach to the provisions of the M&O Contract.

DOE Laboratories also make use of software developed by third parties. Laboratories may download third party OSS to further DOE program objectives. If a Laboratory's software incorporates pre-existing OSS, it may be required to distribute that software as OSS. In many cases, the Laboratories and DOE Programs would benefit from the enhancements made under an OSS system.

This IPI is intended to provide DOE Intellectual Property counsel (DOE IP Counsel) with guidance in dealing with legal issues when Laboratories create or use OSS. OSS is evolving. This IPI will require regular review and possible update based on consultation with affected programs and laboratories as to the impact of this IPI. When more experience with OSS is obtained it may be appropriate to modify laboratory contract language to deal with OSS in a more regularized approach.

DEFINING OPEN SOURCE SOFTWARE

A group of software developers has created an OSS policy by forming an Open Source Initiative (OSI), which is a non-profit corporation, dedicated to managing and promoting OSS for the good of the software development community. However, there are several organizations/groups that promote OSS. Through this IPI, DOE is establishing a minimum set of OSS parameters, based on the industry OSS standards, which parameters set the bounds for OSS with respect to compliance with the M&O contract. One example of OSS industry policy can be found on the OSI webpage located at www.opensource.org. DOE's OSS boundary parameters, which are based on information from the OSI webpage, are attached as Appendix A to this IPI. DOE acknowledges that OSS policy is evolving so the attached Appendix A may be updated to allow the Government's boundary parameters to mirror industry standards.

DOE does not consider the Laboratory's distribution of software through an OSS license to be technology transfer, and the technology transfer mission clause of the M&O Contracts is not applicable to such software distribution. Therefore, the Laboratory will not receive royalties or other compensation for software distributed through an OSS license. Instead, the sharing of OSS, which is created with public funds at the Laboratory, is consistent with DOE's mission to disseminate information to the public. The Laboratory can utilize the OSS policy by either establishing original software as OSS or downloading existing OSS products, preparing derivative OSS works and distributing these new works to the public. DOE does not want to approve each Laboratory OSS package. Therefore, it is recommended that DOE Contracting Officer (DOE CO) give a blanket copyright approval in OSS to the Laboratory when the parameters set forth below are met.

GUIDANCE FOR DEVELOPING OPEN SOURCE SOFTWARE

Some of the software developed by the Laboratories could be distributed to the public under an OSS license. When the Laboratory creates a new software program, the Laboratory, with input from the DOE program that funded the development, should determine the best licensing method to accomplish the DOE mission. When the Laboratory and DOE program determine that a software package should be distributed by establishing an OSS license, the Laboratory must do the following before distributing under an OSS:

- 1) Obtain DOE Program Approval. The DOE CO will require DOE program approval for the Laboratory to distribute as OSS before allowing the Laboratory to assert copyright in the software. The Laboratory's request for approval to assert copyright should include either a written approval from DOE Program or a DOE Program contact so that DOE IP counsel can verify that DOE Program agrees to the creation of an OSS product for public distribution.

Many DOE Programs may routinely develop OSS as part of their programmatic mission. Therefore, it would be burdensome to approve each proposed OSS. Therefore, DOE Programs may grant a "blanket approval" for a particular project/program so that individual requests for approval will not be necessary.

- 2) Assert Copyright in the OSS. In order to allow industry to download and modify OSS, the Laboratory may need to assert copyright in its software if it wishes to keep its software within the OSS system. When both DOE Program and DOE CO have each issued a blanket approval, then the Laboratory may assert copyright in the software to be distributed as OSS without a separate DOE approval. However, the Laboratory must notify the DOE IP Counsel in writing of the creation of the OSS product along with a description of the purpose of the software, the DOE Program approval (blanket) and the OSS location on the Laboratory's webpage (see below). When a blanket approval has not been issued by either DOE Program or DOE CO, then the Laboratory will submit to the DOE CO a request to assert copyright in the software. In most cases, the DOE CO will require DOE IP counsel's review and recommendations with respect to such specific requests. After DOE IP counsel has verified that DOE Program has approved the establishment of the software as OSS by the Laboratory, the DOE IP counsel should recommend approval of the copyright request unless there is a compelling reason to withhold such a request. For example, encryption software, which is export controlled, should not be released as OSS.

Some OSS software may be developed under a CRADA, which allows either the Laboratory or the CRADA Participant to assert copyright in software that has not been marked as CRADA Protected Information without DOE CO or DOE Program approval.

- 3) Send a Copy of OSS to ESTSC. In some instances, the Laboratory OSS may be modified by

third parties and these derivative works may be incorporated into the Laboratory OSS. In order to retain a version of the OSS that was developed using Government funds, the Laboratory must submit the abstract, the object code and source code of the original OSS developed at the Laboratory to ESTSC.

- 4) Provide Public Access to the OSS. The portion of the Laboratory website that is publicly accessible will clearly show the available OSS. The Laboratory may choose to create an OSS webpage that lists the OSS available for downloading by the public. In the alternative, the Laboratory may decide that the OSS should be accessed on the individual Laboratory webpages based on the program funding the research. Also, several Laboratories may want to combine their available OSS onto a single publicly accessible webpage. Finally, the Laboratory may want to use Open Source Bulletin Boards operated by third parties. In any of these situations, the potential OSS user will first agree to an OSS license, which will be accessible on the webpage or as a pop-up window, before accessing the OSS.
- 5) Select an OSS License. Each OSS will be distributed using an OSS license. OSI has standardized these software licenses by creating a list of certified licenses on the OSI webpage. However, there are now dozens of certified OSS licenses and other standard licenses that are not OSI certified. DOE intends to give the Laboratories the flexibility in choosing one or more of these standard licenses to be used with their OSS. However, DOE will require that the Laboratory's standard license contain, at a minimum, the following provisions:
 - a) Disclaimer that disclaims liability for licensees' and third parties' use of the software
 - b) Permission to distribute derivative works made by a licensee, which could include a provision for allowing the third party to commercialize their derivative works subject to trademark restrictions (see 7 below).
 - c) The Laboratory may not collect a royalty from licensee under the Laboratory OSS. However, costs for reproducing and distributing the OSS may be charged.

Since DOE does not consider the OSS license to be a technology transfer instrument, the OSS license will not require the following provisions that are required by the M&O Contracts for Laboratory technology transfer licenses:

- a) Product Liability indemnification
 - b) U.S. Competitiveness
 - c) U.S. Preference
- 6) Provide Periodic Export Control Reviews by the Laboratory. The Laboratory is required to follow its Export Control review procedures before establishing any software as OSS. If the Laboratory is modifying the OSS with derivative works created by third parties, the Laboratory may need to perform periodic export control reviews.
 - 7) Determine if Trademark Protection for the OSS is Appropriate. Many DOE Program and Laboratories have established trademarks on their software. Therefore, the Laboratory should verify whether the OSS is already protected by a trademark. If the OSS is not protected, then DOE Program or the Laboratory may want to seek trademark protection. If the OSS is protected by a trademark, the OSS license should state that a third party's derivative work may not be distributed using the official trademark without appropriate approval.

GUIDANCE FOR USING OPEN SOURCE SOFTWARE

In order to continue DOE's programmatic missions, the Laboratories may find it useful to download OSS from non-government sites and make modifications or derivative works to the software in order to satisfy the Laboratory's goals. The Government realizes that this can be a substantial cost savings by avoiding the expensive process of developing software. Therefore, DOE encourages the Laboratory to use OSS when possible. However, the following guidance should be followed:

- 1) The Laboratory may accept the terms and conditions of an OSS license, which complies with the guidance of Appendix B to this IPI. The Laboratory scientist should consult Laboratory counsel if there are any questions regarding the accepting of OSS license provisions. If Laboratory counsel determines that the deviation from the guidance could create liability or risk for the Laboratory or Government, Laboratory counsel should seek guidance from DOE IP counsel.
- 2) The Laboratory may accept a provision where any derivative works, which are modifications/improvements to the software developed while using the OSS, need to be delivered to the OSS provider or further licensed under a specified OSS license. See (4) below regarding asserting copyright in the derivative works.
- 3) If the Laboratory wants to distribute software that contains both a third party's OSS and the Laboratory's derivative work, Laboratory counsel should be consulted to determine if the OSS provider's license would be violated by doing so. If the Laboratory counsel concludes that the Laboratory can proceed, then the above Guidance for Developing OSS would apply. The Laboratory agrees not to collect a royalty under these circumstances (see (5) below for royalty bearing software licenses).
- 4) If DOE CO has granted blanket approval to the Laboratory, then the Laboratory may assert copyright in OSS derivative works without additional DOE approval when an OSS license requires such copyright. DOE believes that it is in the interest of the public to disseminate Government works to the public, therefore the Laboratories may assert copyright in these types of derivative works without DOE Program approval. Since the derivative works would be fragments of object code or subroutines that would be useless to a user without the original OSS, the Laboratory is not required to deposit this object and source code in ESTSC.

If DOE CO has not granted blanket approval, then the Laboratory will need to request to assert copyright in writing. However, if assertion of copyright is not necessary by the OSS provider, then the Laboratory may send its derivative works to the OSS provider without DOE approval.

- 5) If the Laboratory decides to license (royalty bearing) a software package that combines a third party's OSS and Laboratory derivative works, then the Laboratory will need to seek approval to assert copyright in the derivative work from DOE IP counsel. Also, Laboratory counsel will first need to be consulted to ensure that the third party's OSS license will not be violated. If the Laboratory license will not violate the OSS license, that Laboratory counsel determination should be transmitted to DOE CO along with the request to assert copyright.

CONCLUSION

This IPI covers only OSS where the Laboratory wants to assert copyright. If the software has been or will be patented, then IPIs for transferring the patented technology to the public may apply.



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Appendix A: The Open Source Definition

The distribution terms of OSS must comply with the following criteria:

1. Free Redistribution - The license shall not prevent any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.
2. Source Code - The license must include source code, and must allow distribution in source code as well as compiled form. Where some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost—preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.
3. Derived Works - The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.
4. Integrity of the Author's Source Code - The license may restrict source code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.
5. No Discrimination Against Persons or Groups - The license must not discriminate against any person or group of persons.
6. No Discrimination Against Fields of Endeavor - The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business or from being used for genetic research.
7. License Must Not Be Specific to a Product - The rights attached to the program must not depend on the program's being part of a particular software distribution. If the program is extracted from that distribution and used or distributed within the terms of the program's license, all parties to whom the program is redistributed should have the same rights as those that are granted in conjunction with the original software distribution.
8. The License Must Not Restrict Other Software - The license must not place restrictions on other software that is distributed along with the licensed software. For example, the license must not insist that all other programs distributed on the same medium must be open-source software.

Appendix B: The Open Source License

The following guidance should assist the Laboratory in determining what provisions of a third party OSS license are acceptable to DOE.

1. Disclaimer - The following examples are Disclaimers that DOE consider acceptable.

From the BSD License:

THIS SOFTWARE IS PROVIDED BY THE COPYRIGHT HOLDERS AND CONTRIBUTORS "AS IS" AND ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE DISCLAIMED. IN NO EVENT SHALL THE REGENTS OR CONTRIBUTORS BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

From the GPL (General Public License)

NO WARRANTY

BECAUSE THE PROGRAM IS LICENSED FREE OF CHARGE, THERE IS NO WARRANTY FOR THE PROGRAM, TO THE EXTENT PERMITTED BY APPLICABLE LAW. EXCEPT WHEN OTHERWISE STATED IN WRITING THE COPYRIGHT HOLDERS AND/OR OTHER PARTIES PROVIDE THE PROGRAM "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU ASSUME THE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

IN NO EVENT UNLESS REQUIRED BY APPLICABLE LAW OR AGREED TO IN WRITING WILL ANY COPYRIGHT HOLDER, OR ANY OTHER PARTY WHO MAY MODIFY AND/OR REDISTRIBUTE THE PROGRAM AS PERMITTED ABOVE, BE LIABLE TO YOU FOR DAMAGES, INCLUDING ANY GENERAL, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE THE PROGRAM (INCLUDING BUT NOT LIMITED TO LOSS OF DATA OR DATA BEING RENDERED INACCURATE OR LOSSES SUSTAINED BY YOU OR THIRD PARTIES OR A FAILURE OF THE PROGRAM TO OPERATE WITH ANY OTHER PROGRAMS), EVEN IF SUCH HOLDER OR OTHER PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

2. Limitation of Liability - The following example is considered acceptable.

From the MPL (Mozilla Public License) License:

LIMITATION OF LIABILITY.

UNDER NO CIRCUMSTANCES AND UNDER NO LEGAL THEORY, WHETHER TORT (INCLUDING NEGLIGENCE), CONTRACT, OR OTHERWISE, SHALL THE INITIAL DEVELOPER, ANY OTHER CONTRIBUTOR, OR ANY DISTRIBUTOR OF COVERED CODE, OR ANY SUPPLIER OF ANY OF SUCH PARTIES, BE LIABLE TO YOU OR ANY OTHER PERSON FOR ANY INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES OF ANY CHARACTER INCLUDING, WITHOUT LIMITATION, DAMAGES FOR LOSS OF GOODWILL, WORK STOPPAGE, COMPUTER FAILURE OR MALFUNCTION, OR ANY AND ALL OTHER COMMERCIAL DAMAGES OR LOSSES, EVEN IF SUCH PARTY SHALL HAVE BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. THIS LIMITATION OF LIABILITY SHALL NOT APPLY TO LIABILITY FOR DEATH OR PERSONAL INJURY RESULTING FROM SUCH PARTY'S NEGLIGENCE TO THE EXTENT APPLICABLE LAW PROHIBITS SUCH LIMITATION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THAT EXCLUSION AND LIMITATION MAY NOT APPLY TO YOU.

3. Restrictions for U.S. Government Users, which would include Government Laboratories:

From the MPL (Mozilla Public License) License:

U.S. GOVERNMENT END USERS.

The Covered Code is a "commercial item," as that term is defined in 48 C.F.R. 2.101 (Oct. 1995), consisting of "commercial computer software" and "commercial computer software documentation," as such terms are used in 48 C.F.R. 12.212 (Sept. 1995). Consistent with 48 C.F.R. 12.212 and 48 C.F.R. 227.7202-1 through 227.7202-4 (June 1995), all U.S. Government End Users acquire Covered Code with only those rights set forth herein.

4. Copyright or Patent Infringement:

From the MPL (Mozilla Public License) License:

3.4. Intellectual Property Matters

(a) Third Party Claims.

If You have knowledge that a party claims an intellectual property right in particular functionality or code (or its utilization under this License), you must include a text file with the source code distribution titled "LEGAL" which describes the claim and the party making the claim in sufficient detail that a recipient will know whom to contact. If you obtain such knowledge after You make Your Modification available as described in Section 3.2, You shall promptly modify the LEGAL file in all copies You make available thereafter and shall take other steps (such as notifying appropriate mailing lists or newsgroups) reasonably calculated to inform those who received the Covered Code that new knowledge has been obtained.

(b) Contributor APIs.

If Your Modification is an application programming interface and You own or control patents which are reasonably necessary to implement that API, you must also include this information in the LEGAL file.